PROPELLER SHAFT

3310-01

INDEX

GENERAL INFORMATION

CONFIGURATION AND FUNCTION

OVERVIEW AND OPERATING PROCESS

REMOVAL AND INSTALLATION

PROPELLER SHAFT (4WD ONLY) 3310-01

GENERAL INFORMATION

1. SPECIFICATION

Description		Specification
Structure		2-piece type with CV joint, spider, and rubber coupling
Weight		below 12.0 kg
Joint type		CV joint, spider, rubber coupling
Spider	Numbers	one (installed on center bearing side)
	External diameter	Ø24 mm
	Overall size	Ø62.5 mm
Dimension (Length x Dia.)	No.1 shaft (TM to spider)	1,064 x Ø60 mm
	No. 2 shaft (spider to axle)	847.5 x Ø60 mm
Runout of tube (after installation)		0.3 mm
Unbalance		80g.mm @ 3,500rpm (second measurement: 120 g.mm)
U-joint	Starting torque	0.3 to 0.7 Nm
	Minimum starting angle	18°
Amount of grease in CV joint		210+-10g

2. TIGHTENING TORQUE

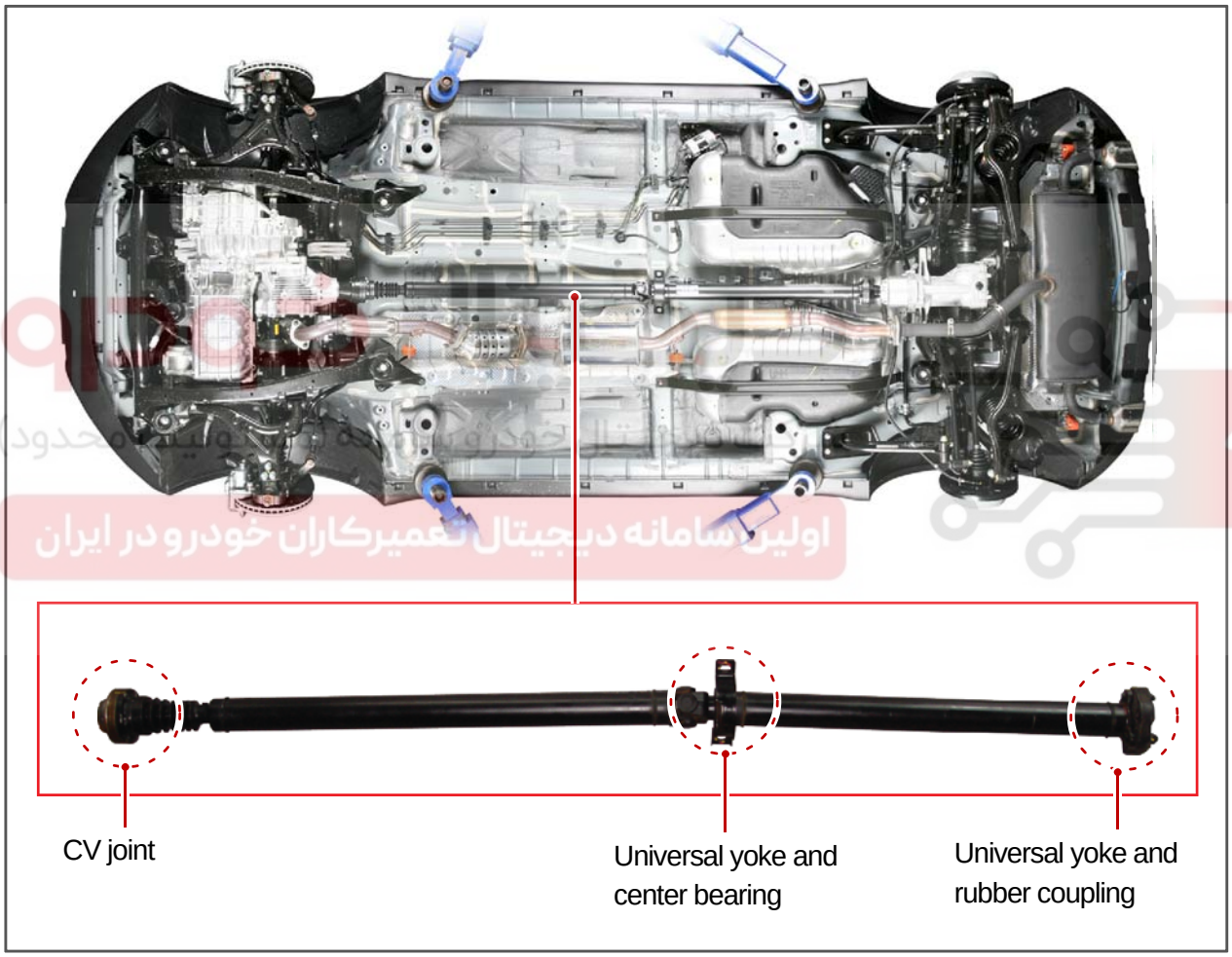
Fastener	Tightening torque
Bolt/nut for rubber coupling (rear axle side)	39.2 to 49.0 Nm
Bolt/nut for CV joint (transaxle side)	29.4 to 39.2 Nm
Mounting bolt for center bearing	58.8 to 68.6 Nm

Modification basis	
Application basis	
Affected VIN	

OVERVIEW AND OPERATING PROCESS

1. OVERVIEW

The propeller shaft is a thin steel pipe which transfers the power from the transmission to the E-coupling, and has high resistance to torsion and bending.
The propeller shaft has the universal joint (cross axle) mounted on the center of the shaft and splines for the slip joint on the E-coupling side to accommodate the height and length changes which occur as the shaft rotates at high speed.
And the rubber bushing for center bearing in the center of the propeller shaft keeps the balance of the shaft and absorbs its vibration.

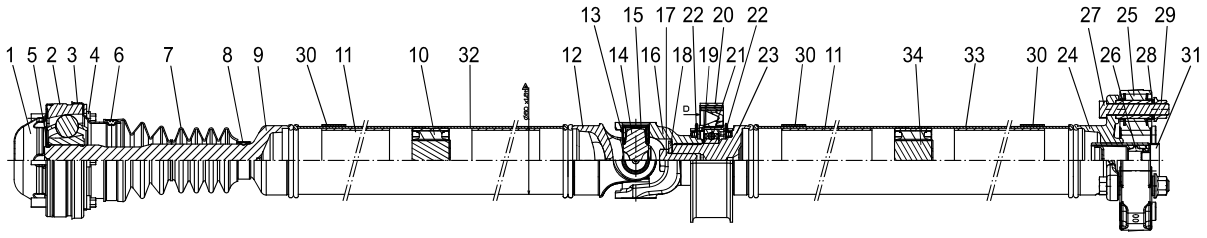


▶ **Function of propeller shaft**

- Transmits driving torque.
- Accommodates the angle change (universal joint / CV joint).
- Accommodates the axial length change (splines for the slip joint).

Modification basis	
Application basis	
Affected VIN	

2. COMPONENT



1	End cap	18	Plain washer
2	VL joint assembly	19	AL washer
3	Washer	20	Center bearing assembly
4	Bolt	21	Ball bearing
5	Circlip	22	Dust shield
6	Clamp (big)	23	Intermediate shaft
7	Boot	24	Fork yoke
8	Clamp (small)	25	Rubber coupling
9	Stub shaft	26	Alignment support
10	Bending absorber	27	Bolt
11	Paper damper	28	Washer
12	Tube yoke	29	Lock nut
13	Oil seal	30	Balance weight
14	Spider	31	Protecter
15	Bearing cap	32	Tube
16	Intermediate yoke	33	Tube
17	Bolt	34	Bending absorber

CAUTION

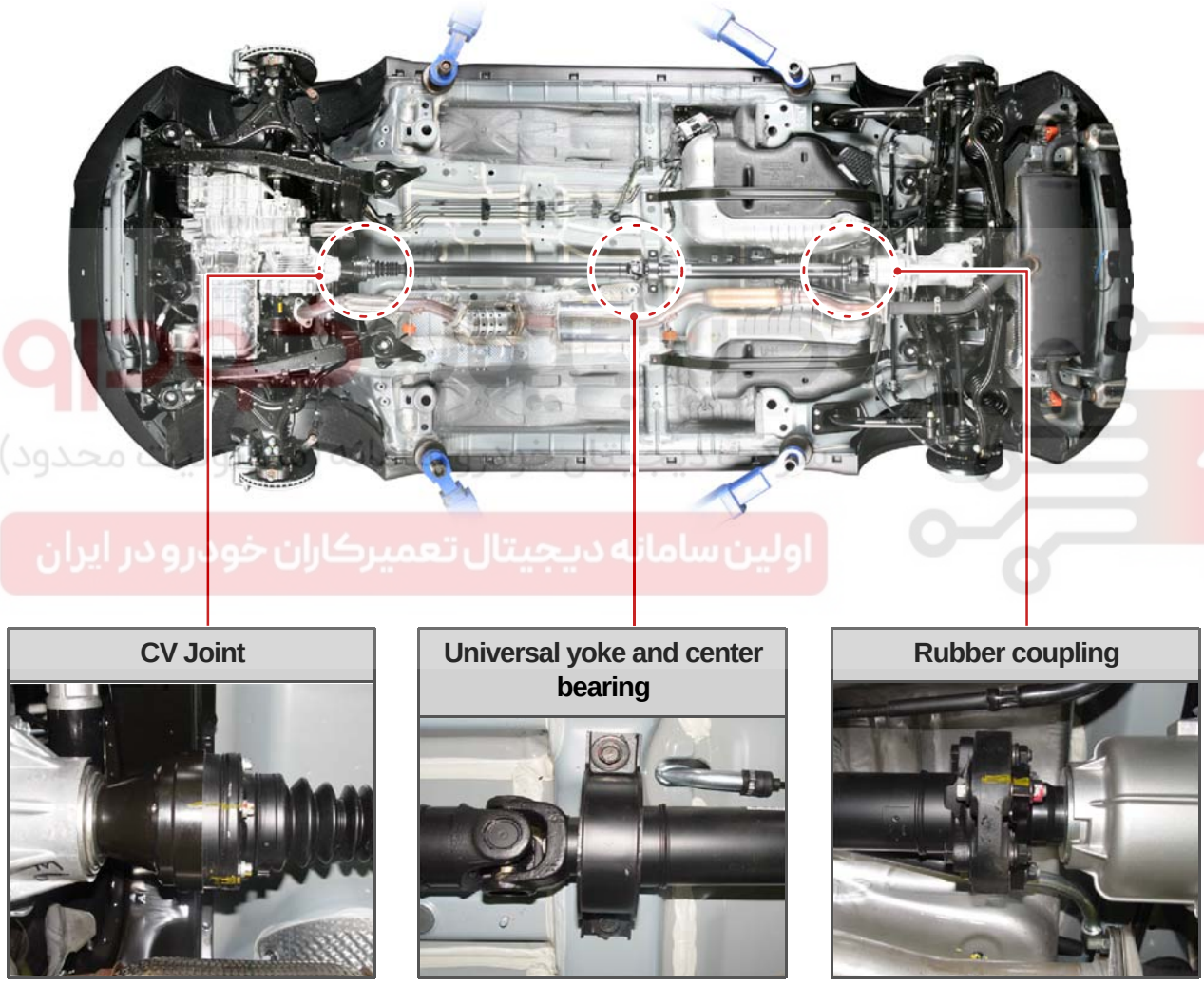
Do not remove the rubber coupling since the vibration balance could be improper once removed it.

Modification basis	
Application basis	
Affected VIN	

CONFIGURATION AND FUNCTION

S.G.N. 3310-00 CONFIGURATION

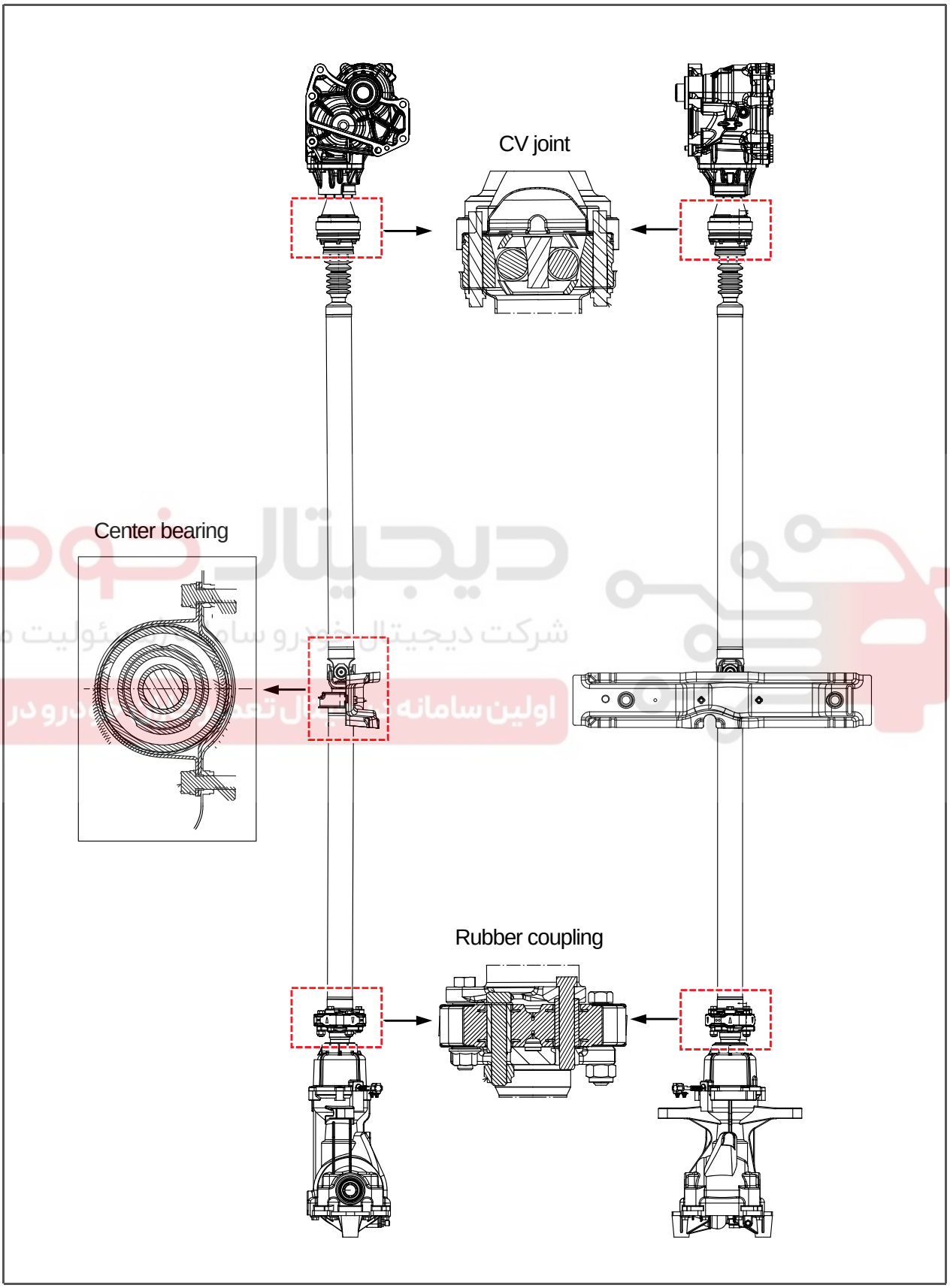
The propeller shaft is only used for 4WD vehicles.
The cross axle (universal joint), center bearing and rubber bushing for center bearing are mounted on the center of the shaft. And the CV (Constant Velocity) joint is mounted on the PTU side and the three-arm flange type rubber coupling is on the E-coupling side.



CV Joint	Universal yoke and center bearing	Rubber coupling

Modification basis	
Application basis	
Affected VIN	

1) Component



Modification basis	
Application basis	
Affected VIN	

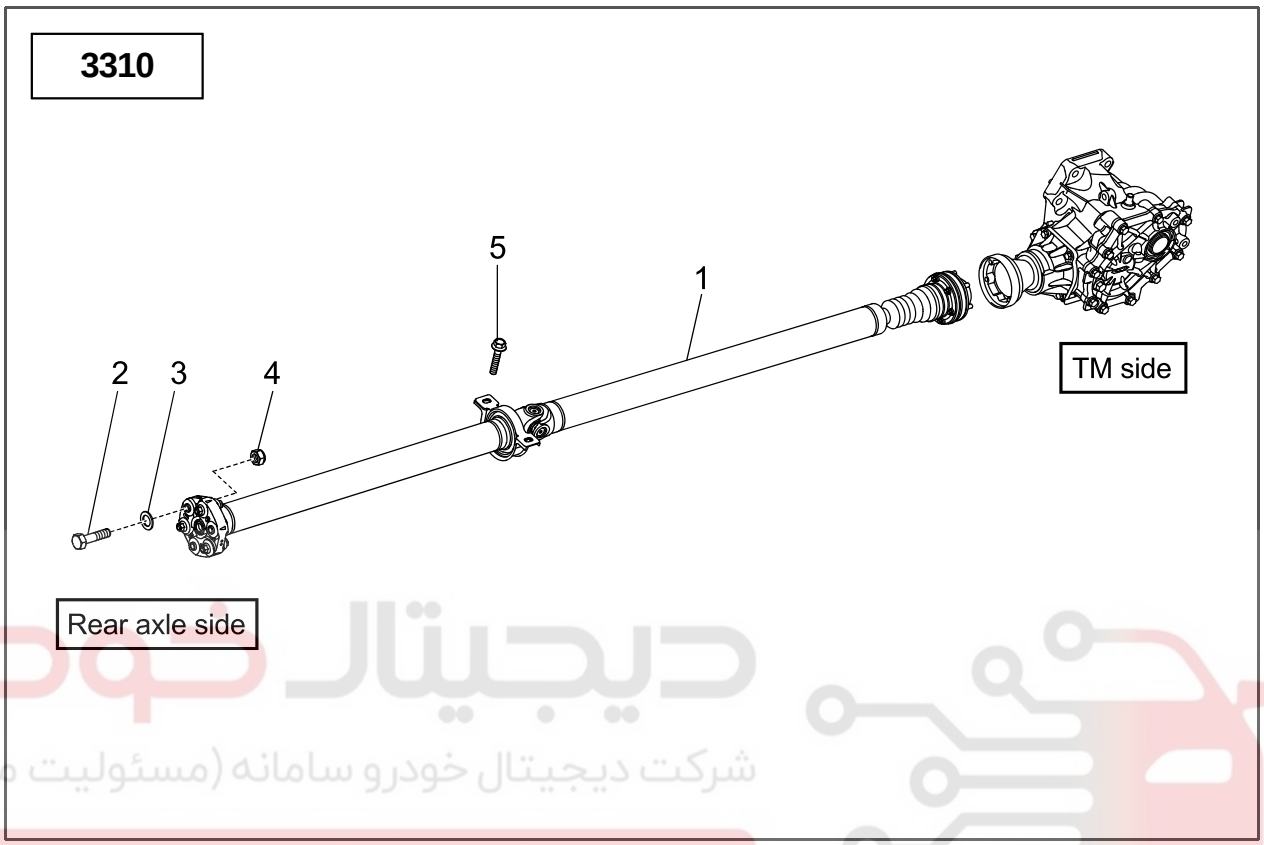
REMOVAL AND INSTALLATION

S.G.N. 3310-00 TROUBLESHOOTING

Problem	Possible Cause	Action
Shimmy	Incorrectly assembled CV joint	Reassemble
	Bent propeller shaft	Replace with new one
	Incorrect symmetry of universal joint	Reassemble
	Incorrectly assembled yoke	Reassemble
Abnormal noise	Worn or damaged center bearing	Replace with new one
	Missing snap ring from universal joint	Replace with new one
	Loose yoke	Retighten

S.G.N.
3310-01 PROPELLER SHAFT

1) Component

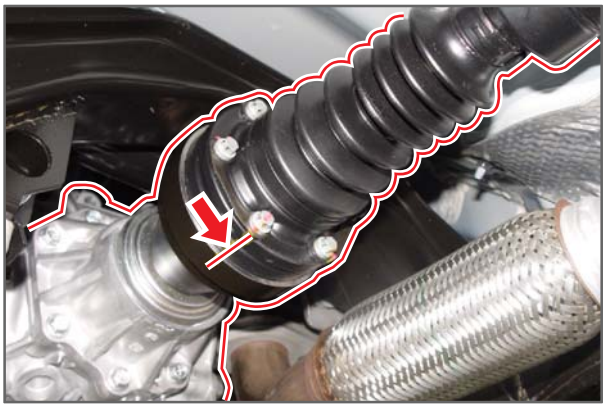


1. Propeller shaft assembly
2. Bolt
3. Washer - Plain
4. Nut
5. Center bearing bracket mounting bolt

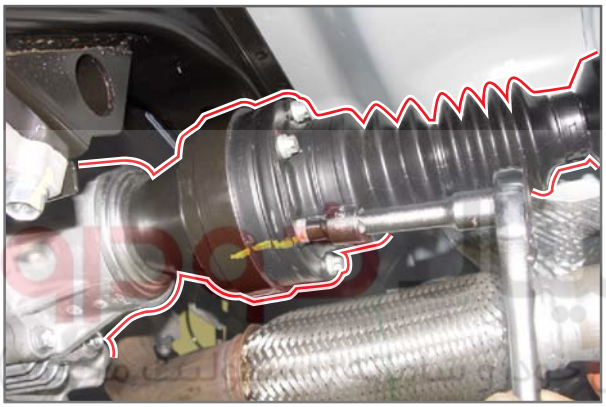
Modification basis	
Application basis	
Affected VIN	

2) Removal

Preceding work - Disconnect the negative (-) battery terminal cable and lift the vehicle with a lift.

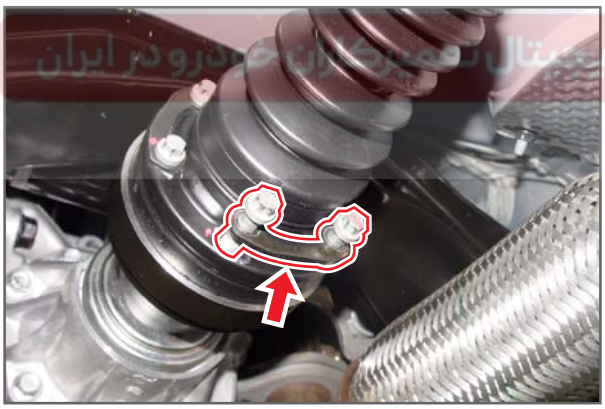


1. Put matchmarks on the front CV joint and the flange of the propeller shaft before removing.

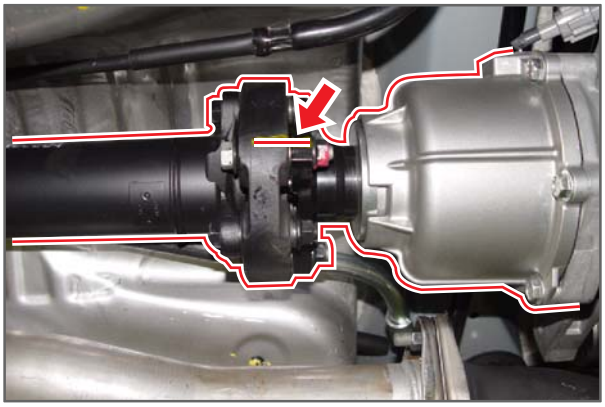


2. Unscrew the 6 mounting bolts (8 mm) on the CV joint side.

Tightening torque 39.2 to 44.1 Nm

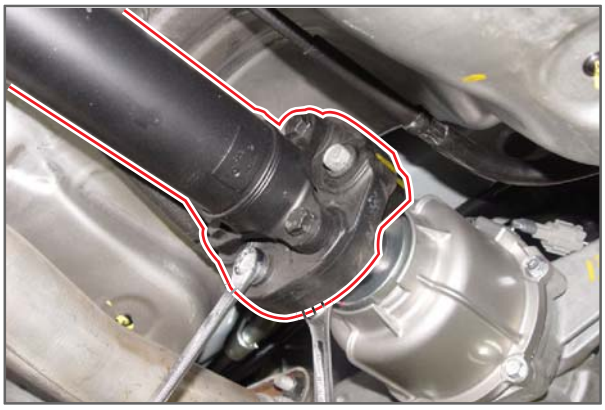


CAUTION
Check all washers are not missing and tighten the bolts and nuts in two or three steps diagonally.



3. Put matchmarks on the rubber coupling at the rear and the yoke of the E-coupling side.

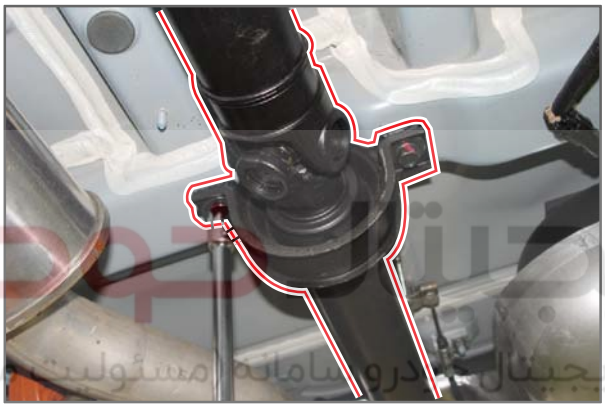
Modification basis	
Application basis	
Affected VIN	



4. Unscrew the bolts (14 mm) on the rubber coupling side and the nuts (17 mm) on the E-coupling side.

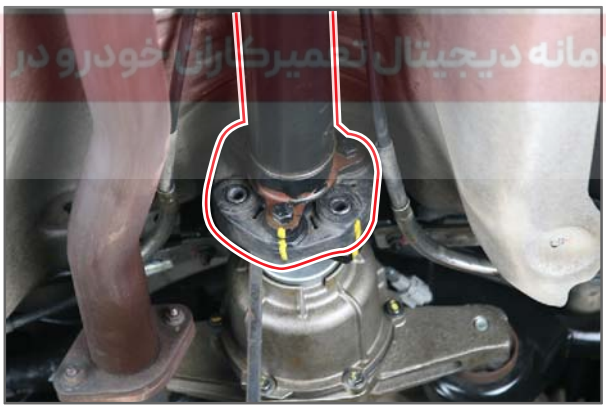
Tightening torque 39.2 to 49.0 Nm

CAUTION
When tightening, tighten the bolts and nuts in two or three steps diagonally.



5. Loosen the two mounting bolts (14 mm) on the center bearing. But do not remove the mounting bolt from the propeller shaft, as the shaft can fall.

Tightening torque 58.8 to 68.6 Nm



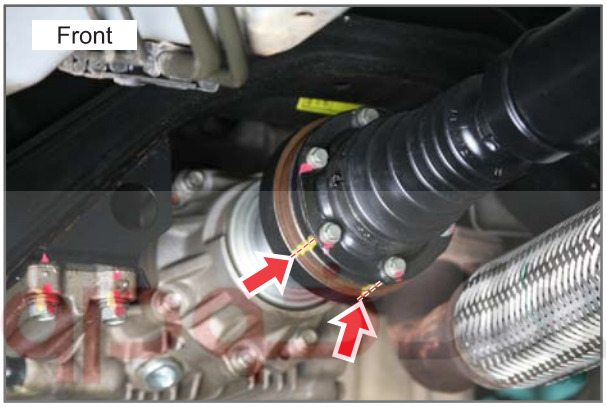
6. Remove the E-coupling yoke and the propeller shaft. Remove the CV joint side.

7. Remove the propeller shaft from the vehicle.

Modification basis	
Application basis	
Affected VIN	

3) Installation

1. Pre-tighten the sensor bearing bracket of the propeller shaft.



2. Align the matchmarks on the front and rear propeller shafts and tighten the bolts and nuts and then bearing bolts.

Tightening torque for CV joint mounting bolt	29.4 to 39.2Nm
Tightening torque for E-coupling mounting bolt/nut	39.02 to 49.0Nm
Tightening torque for center bearing mounting bolt	58.8 to 68.6Nm

CAUTION

When tightening, tighten the bolts and nuts in two or three steps diagonally.

Modification basis	
Application basis	
Affected VIN	

4) Inspection

1. Run-out of propeller shaft

   - Set up the dial gauge on the center point of propeller shaft (shafts for PTU and E-coupling) and measure the run-out while rotating it. If the runout is out of the specified range, replace it with new one.

Limit	0.3 mm

2. Starting torque of universal joint

Specified value	0.3 ~ 0.7 Nm

3. Major causes of shimmy

   - Balance weights missing
   - Excessive run-out of propeller shaf
   - When using the universal bolts other than specified bolts
   - Excessive wear of universal joint
   - Stuck in CV joint

5) Disassembling and Assembling of Rubber Coupling

1. Put matchmarks on the shaft and the rubber coupling from the removed propeller shaft.

2. Unscrew the 3 mounting bolts/nuts (14 mm) on the rubber coupling.

Tightening torque 39.2 to 49.0 Nm

3. Remove the rubber coupling and install a new rubber coupling by paying attention to the installation direction.

Modification basis	
Application basis	
Affected VIN	